



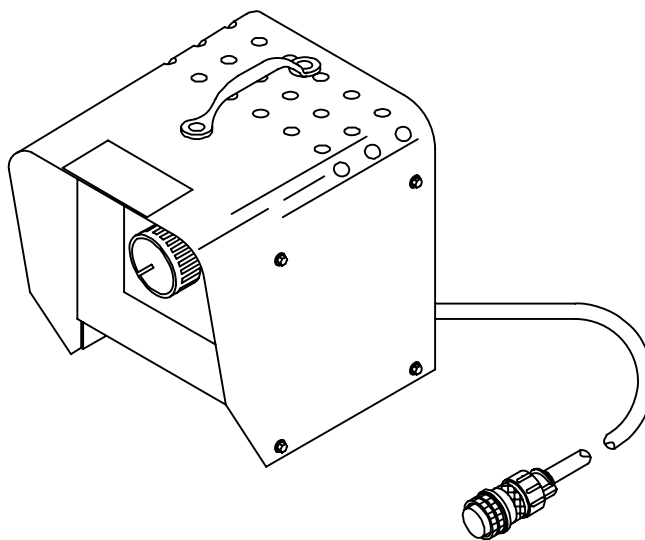
Miller®

May 1993

Form: OM-823H

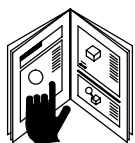
Effective With Serial No. KB055102

OWNER'S MANUAL



**RHC-3, RHC-3-2, RHC-3GD25B,
RHCS-3, RHC-3-GD34A, RHC-14,
And RHC-23**

- Remote Hand Controls
- For Remote Amperage Or Voltage Control
- RHC-14 And RHC-23 Models Add Output (Contactor) Control
- Primarily For SMAW Welding
- 20 ft (6 m) Interconnecting Cord



- Read and follow these instructions and all safety blocks carefully.
- Have only trained and qualified persons install, operate, or service this unit.
- Call your distributor if you do not understand the directions.



- Give this manual to the operator.



- For help, call your distributor
- or: MILLER ELECTRIC Mfg. Co., P.O. Box 1079, Appleton, WI 54912 414-734-9821

MILLER'S TRUE BLUE™ LIMITED WARRANTY

Effective January 1, 1992
(Equipment with a serial number preface of "KC" or newer)

This limited warranty supersedes all previous MILLER warranties and is exclusive with no other guarantees or warranties expressed or implied.

LIMITED WARRANTY - Subject to the terms and conditions below, MILLER Electric Mfg. Co., Appleton, Wisconsin, warrants to its original retail purchaser that new MILLER equipment sold after the effective date of this limited warranty is free of defects in material and workmanship at the time it is shipped by MILLER. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

Within the warranty periods listed below, MILLER will repair or replace any warranted parts or components that fail due to such defects in material or workmanship. MILLER must be notified in writing within thirty (30) days of such defect or failure, at which time MILLER will provide instructions on the warranty claim procedures to be followed.

MILLER shall honor warranty claims on warranted equipment listed below in the event of such a failure within the warranty time periods. All warranty time periods start on the date that the equipment was delivered to the original retail purchaser, or one year after the equipment is sent to the distributor.

1. 5 Years Parts - 3 Years Labor
 - * Original main power rectifiers
2. 3 Years - Parts and Labor
 - * Transformer/Rectifier Power Sources
 - * Plasma Arc Cutting Power Sources
 - * Semi-Automatic and Automatic Wire Feeders
 - * Robots
3. 2 Years - Parts and Labor
 - * Engine Driven Welding Generators
(NOTE: Engines are warranted separately by the engine manufacturer.)
 - * Air Compressors
4. 1 Year - Parts and Labor
 - * Motor Driven Guns
 - * Process Controllers
 - * Water Coolant Systems
 - * HF Units
 - * Grids
 - * Spot Welders
 - * Load Banks
 - * SDX Transformers
 - * Running Gear/Trailers
 - * Field Options

(NOTE: Field options are covered under True Blue™ for the remaining warranty period of the product they are installed in, or for a minimum of one year - whichever is greater.)
5. 6 Months - Batteries
6. 90 Days - Parts and Labor
 - * MIG Guns/TIG Torches
 - * Plasma Cutting Torches

- * Remote Controls
- * Accessory Kits
- * Replacement Parts

MILLER'S True Blue™ Limited Warranty shall not apply to:

1. Items furnished by MILLER, but manufactured by others, such as engines or trade accessories. These items are covered by the manufacturer's warranty, if any.
2. Consumable components; such as contact tips, cutting nozzles, contactors and relays or parts that fail due to normal wear.
3. Equipment that has been modified by any party other than MILLER, or equipment that has been improperly installed, improperly operated or misused based upon industry standards, or equipment which has not had reasonable and necessary maintenance, or equipment which has been used for operation outside of the specifications for the equipment.

MILLER PRODUCTS ARE INTENDED FOR PURCHASE AND USE BY COMMERCIAL/INDUSTRIAL USERS AND PERSONS TRAINED AND EXPERIENCED IN THE USE AND MAINTENANCE OF WELDING EQUIPMENT.

In the event of a warranty claim covered by this warranty, the exclusive remedies shall be, at MILLER'S option: (1) repair; or (2) replacement; or, where authorized in writing by MILLER in appropriate cases, (3) the reasonable cost of repair or replacement at an authorized MILLER service station; or (4) payment of or credit for the purchase price (less reasonable depreciation based upon actual use) upon return of the goods at customer's risk and expense. MILLER'S option of repair or replacement will be F.O.B., Factory at Appleton, Wisconsin, or F.O.B. at a MILLER authorized service facility as determined by MILLER. Therefore no compensation or reimbursement for transportation costs of any kind will be allowed.

TO THE EXTENT PERMITTED BY LAW, THE REMEDIES PROVIDED HEREIN ARE THE SOLE AND EXCLUSIVE REMEDIES. IN NO EVENT SHALL MILLER BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LOSS OF PROFIT), WHETHER BASED ON CONTRACT, TORT OR ANY OTHER LEGAL THEORY.

ANY EXPRESS WARRANTY NOT PROVIDED HEREIN AND ANY IMPLIED WARRANTY, GUARANTY OR REPRESENTATION AS TO PERFORMANCE, AND ANY REMEDY FOR BREACH OF CONTRACT TORT OR ANY OTHER LEGAL THEORY WHICH, BUT FOR THIS PROVISION, MIGHT ARISE BY IMPLICATION, OPERATION OF LAW, CUSTOM OF TRADE OR COURSE OF DEALING, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE, WITH RESPECT TO ANY AND ALL EQUIPMENT FURNISHED BY MILLER IS EXCLUDED AND DISCLAIMED BY MILLER.

Some states in the U.S.A. do not allow limitations of how long an implied warranty lasts, or the exclusion of incidental, indirect, special or consequential damages, so the above limitation or exclusion may not apply to you. This warranty provides specific legal rights, and other rights may be available, but may vary from state to state.

In Canada, legislation in some provinces provides for certain additional warranties or remedies other than as stated herein, and to the extent that they may not be waived, the limitations and exclusions set out above may not apply. This Limited Warranty provides specific legal rights, and other rights may be available, but may vary from province to province.

RECEIVING-HANDLING

Before unpacking equipment, check carton for any damage that may have occurred during shipment. File any claims for loss or damage with the delivering carrier. Assistance for filing or settling claims may be obtained from distributor and/or equipment manufacturer's Transportation Department.

When requesting information about this equipment, always provide Model Designation and Serial or Style Number.

Use the following spaces to record Model Designation and Serial or Style Number of your unit. The information is located on the rating label or nameplate.

Model _____

Serial or Style No. _____

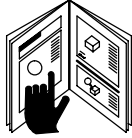
Date of Purchase _____

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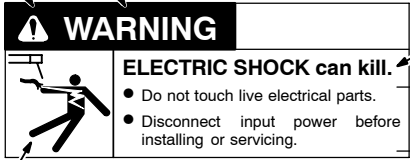
SECTION 1 – SAFETY INFORMATION

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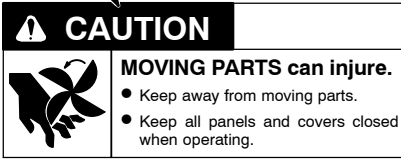
- Read all safety messages throughout this manual.
- Obey all safety messages to avoid injury.
- Learn the meaning of WARNING and CAUTION.

1 2




3 4

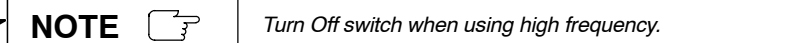
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5



6



1 Safety Alert Symbol

2 Signal Word

WARNING means possible death or serious injury can happen.

CAUTION means possible minor injury or equipment damage can happen.

3 Statement Of Hazard And Result

4 Safety Instructions To Avoid Hazard

5 Hazard Symbol (If Available)

6 Safety Banner

Read safety blocks for each symbol shown.

7 NOTE

Special instructions for best operation – not related to safety.

Figure 1-1. Safety Information

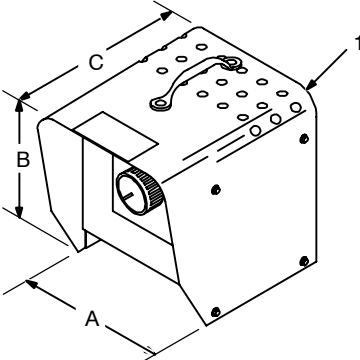
SECTION 2 – SPECIFICATIONS

Table 2-1. Remote Hand Control

Specification	Description
Model Description	RHC: Remote Hand Control; GD: For Use With Welding Generators Only; Suffix Of -2: Used To Control Two Identical Welding Power Sources Or Welding Generators At The Same Time.
Interconnecting Cord	20 ft (6 m)
Overall Dimensions	See Figure 3-1

SECTION 3 – INSTALLATION

3-1. Location



1 Remote Hand Control

Install RHC onto wall, or place on bench or other convenient location.

	Inches	Millimeters
A	7-1/2	191
B	9-1/2	241
C	8-3/4	222

Ref. ST-141 127-A

Figure 3-1. Overall Dimensions

3-2. Interconnections

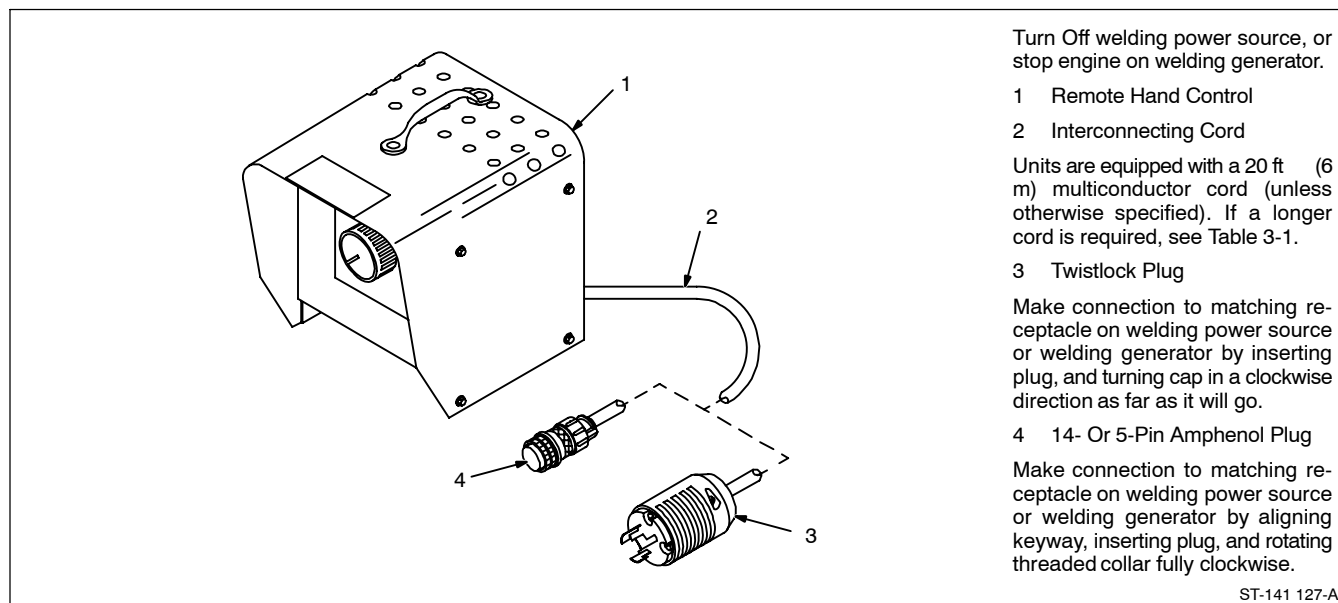




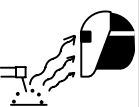



Figure 3-2. Interconnections

Table 3-1. Interconnecting Cord Conductor Length And Size

Amperage Or Voltage Control	
Cord Length	Conductor Size*
Up to 20 ft (6 m)	No. 16
Up to 20 ft (6 m) (GD Models)	No. 14
21 to 100 ft (6 to 30 m) (GD Models)	No. 12
21 to 50 ft (6 to 15 m)	No. 14
51 to 100 ft (16 to 31 m)	No. 12
101 to 200 ft (31 to 61 m)	No. 10

*AWG – American Wire Gauge

SECTION 4 – OPERATION

 WARNING	
 <p>ELECTRIC SHOCK can kill.</p> <ul style="list-style-type: none"> • Always wear dry insulating gloves. • Insulate yourself from work and ground. • Do not touch live electrical parts. • Keep all panels and covers securely in place. 	 <p>ARC RAYS can burn eyes and skin; NOISE can damage hearing.</p> <ul style="list-style-type: none"> • Wear welding helmet with correct shade of filter. • Wear correct eye, ear, and body protection.
 <p>FUMES AND GASES can be hazardous to your health.</p> <ul style="list-style-type: none"> • Keep your head out of the fumes. • Ventilate area, or use breathing device. • Read Material Safety Data Sheets (MSDSs) and manufacturer's instructions for material used. 	 <p>MAGNETIC FIELDS FROM HIGH CURRENTS can affect pacemaker operation.</p> <ul style="list-style-type: none"> • Pacemaker wearers keep away. • Wearers should consult their doctor before going near arc welding, gouging, or spot welding operations.
 <p>WELDING can cause fire or explosion.</p> <ul style="list-style-type: none"> • Do not weld near flammable material. • Watch for fire; keep extinguisher nearby. • Do not locate unit over combustible surfaces. • Do not weld on closed containers. • Allow work and equipment to cool before handling. 	<p>See Safety Precautions at beginning of welding power source or welding generator manual for basic welding safety information.</p>

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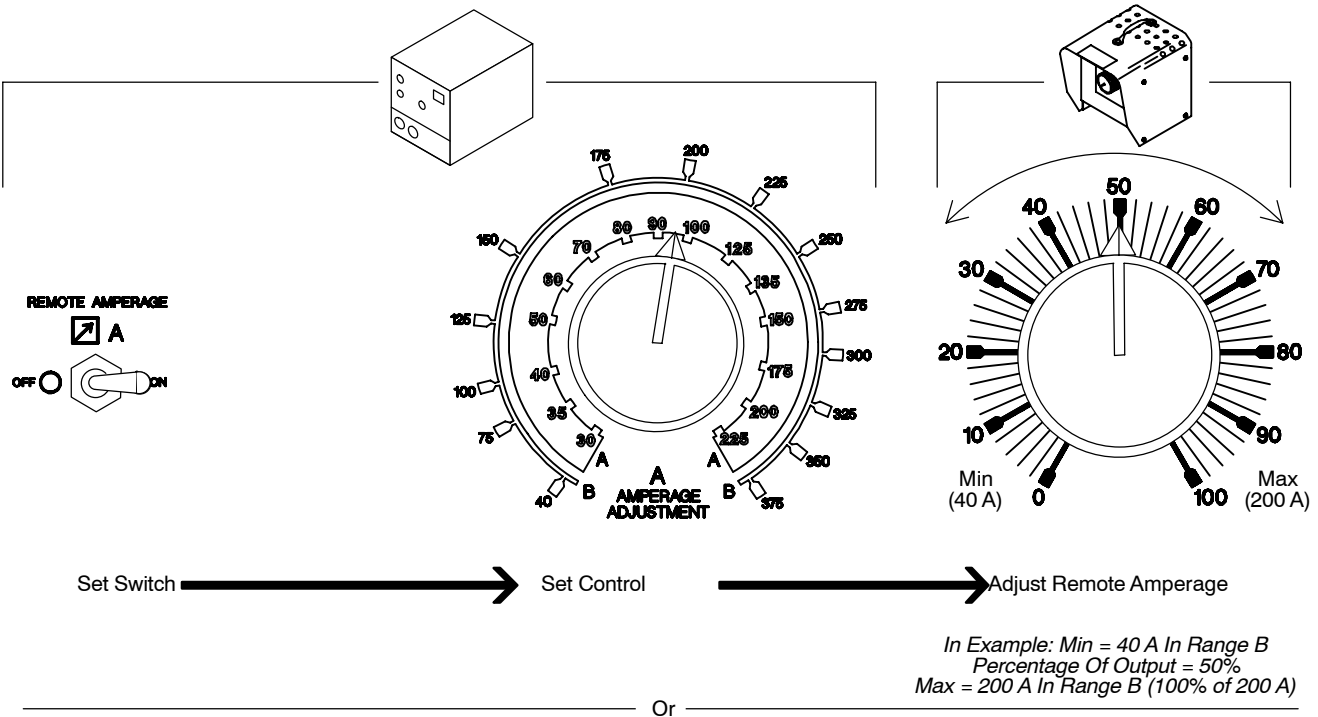
4-1. Control Operation

NOTE

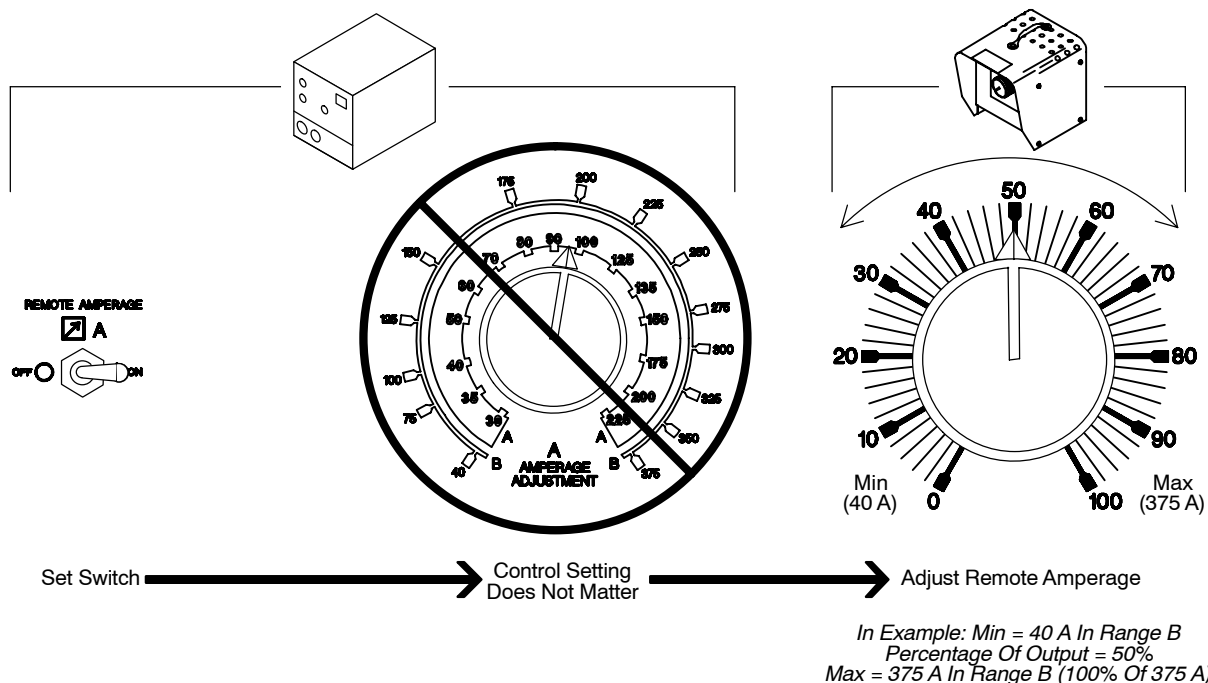
See welding power source or welding generator Owner's Manual to determine if Remote Hand Control will act as a fine Amperage or Voltage control, or as a full range Amperage or Voltage control.

A. Adjusting Amperage Or Voltage Without Output (Contactor) Control

EXAMPLE Of Fine Remote Amperage Control Without Output (Contactor) Control



EXAMPLE Of Full Remote Amperage Control Without Output (Contactor) Control



Ref. ST-122 023-A / Ref. ST-141 127-A / ST-039 411-D

Figure 4-1. Examples Of Amperage Or Voltage Adjustment Without Output (Contactor) Control

B. Adjusting Amperage Or Voltage With Output (Contactor) Control (RHC-14 And RHC-23 Models Only)

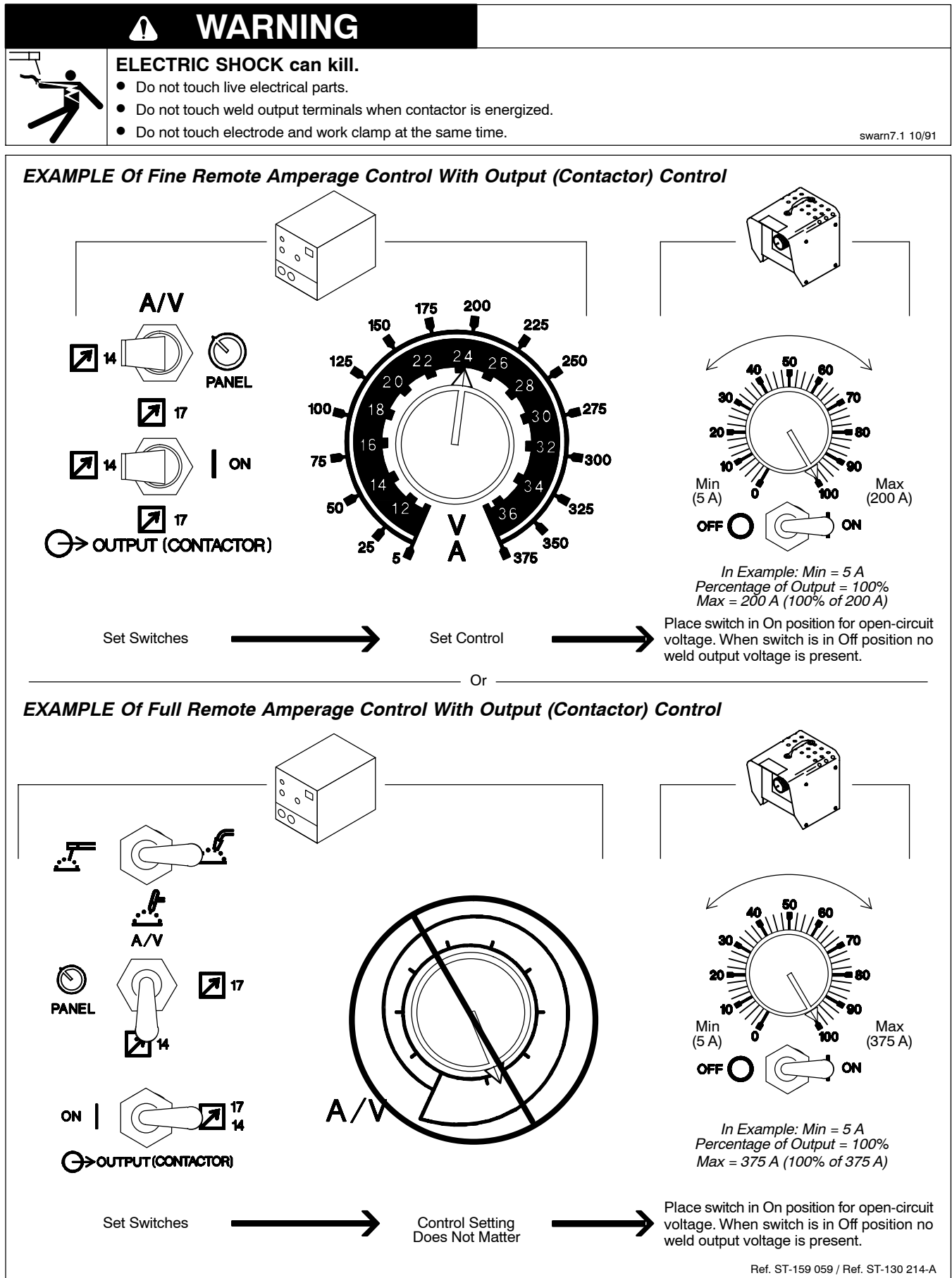




Figure 4-2. Examples Of Amperage Or Voltage Adjustment With Output (Contactor) Control

C. Remote Hand Control Of Two Welding Power Sources Or Welding Generators

Models with the suffix -2, are designed to control two identical welding power sources or welding generators at the same time. Turning the knob on the remote hand control adjusts the amperage or voltage on each welding power source or welding generator to the same output setting. Refer to welding power source or welding generator Owner's Manual for additional information.


SECTION 5 – MAINTENANCE & TROUBLESHOOTING

**WARNING**



ELECTRIC SHOCK can kill.

- Do not touch live electrical parts.
- Turn Off welding power source, and disconnect remote control before inspecting, maintaining, or servicing.



HOT PARTS can cause severe burns.

- Allow cooling period before maintaining or servicing.

Maintenance and troubleshooting to be performed only by qualified persons.

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5-1. Routine Maintenance

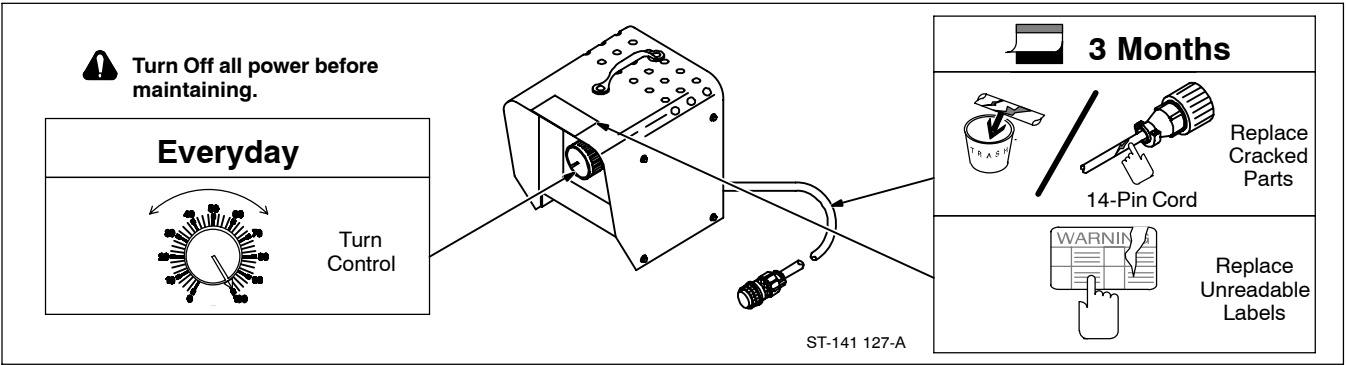


Figure 5-1. Maintenance Schedule

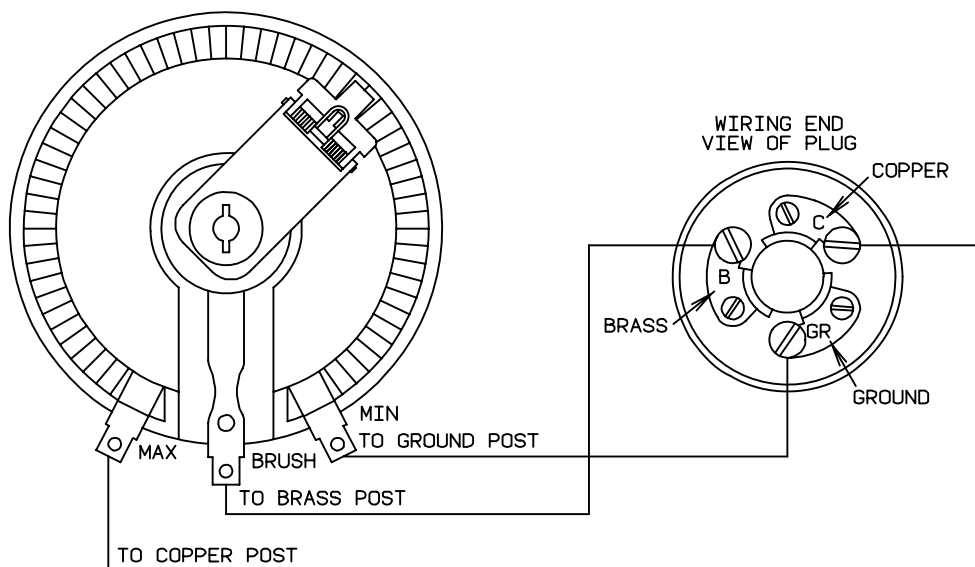
5-2. Troubleshooting

Table 5-1. Welding Trouble

Trouble	Remedy	Section
No amperage or voltage control.	Set switches and controls on welding power source or generator.	4, *
	Check weld output on welding power source or generator.	*
	Secure cord connections or replace cords, if necessary.	--
No Output (Contactor) control.	Switch in wrong position or control not so equipped.	Figure 4-2

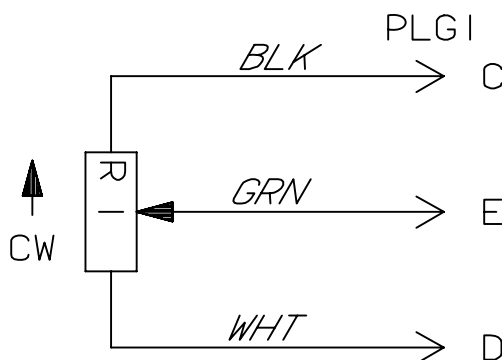
*See welding power source or generator Owner's Manual.

SECTION 6 – ELECTRICAL DIAGRAMS



SA-150 670

Figure 6-1. Circuit Diagram For RHC-3



Ref. SA-150 671

Figure 6-2. Circuit Diagram For RHCS-3

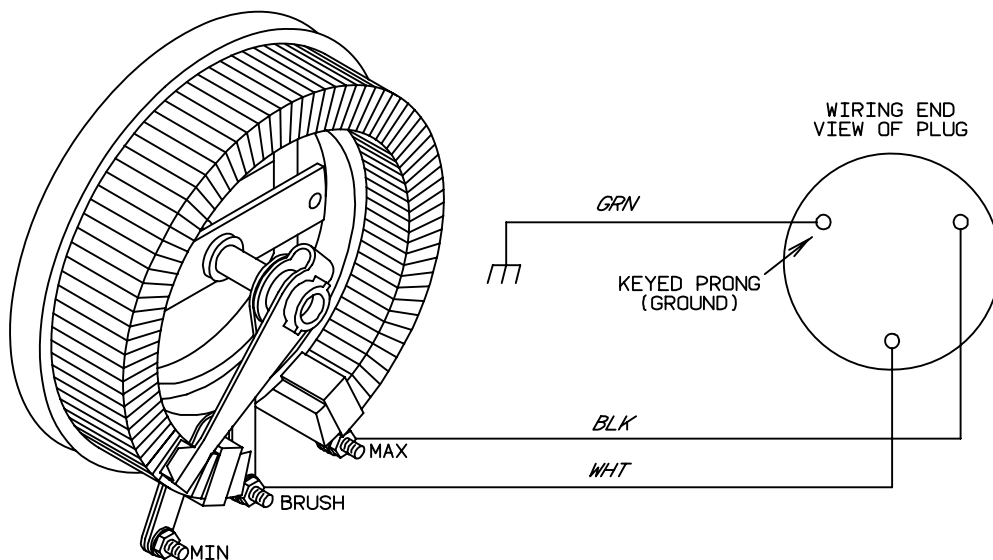


Figure 6-3. Circuit Diagram For RHC-3-GD34A

SA-094 231-A

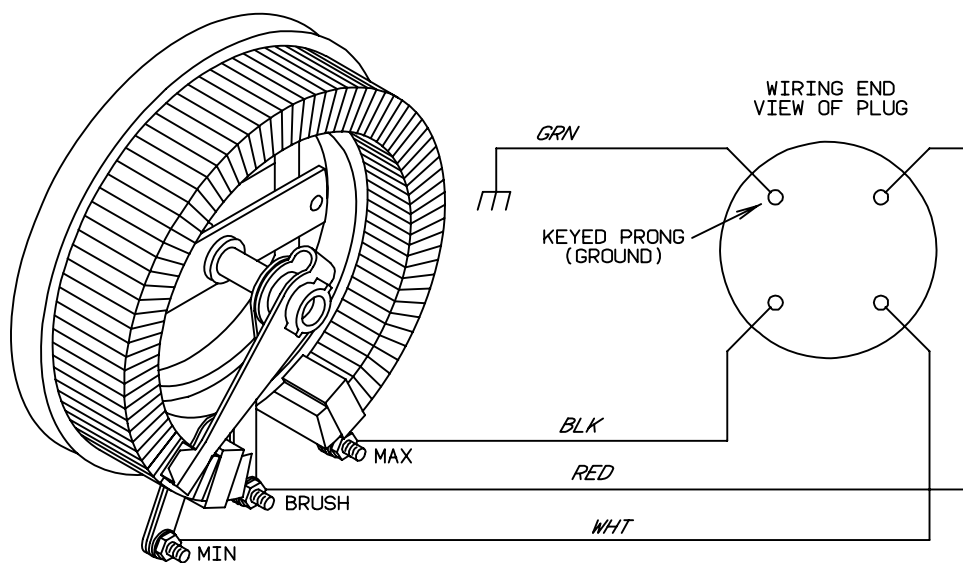


Figure 6-4. Circuit Diagram For RHC-3-GD25B

SA-094 232-A

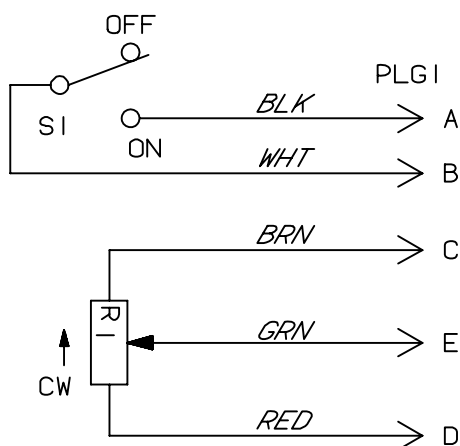
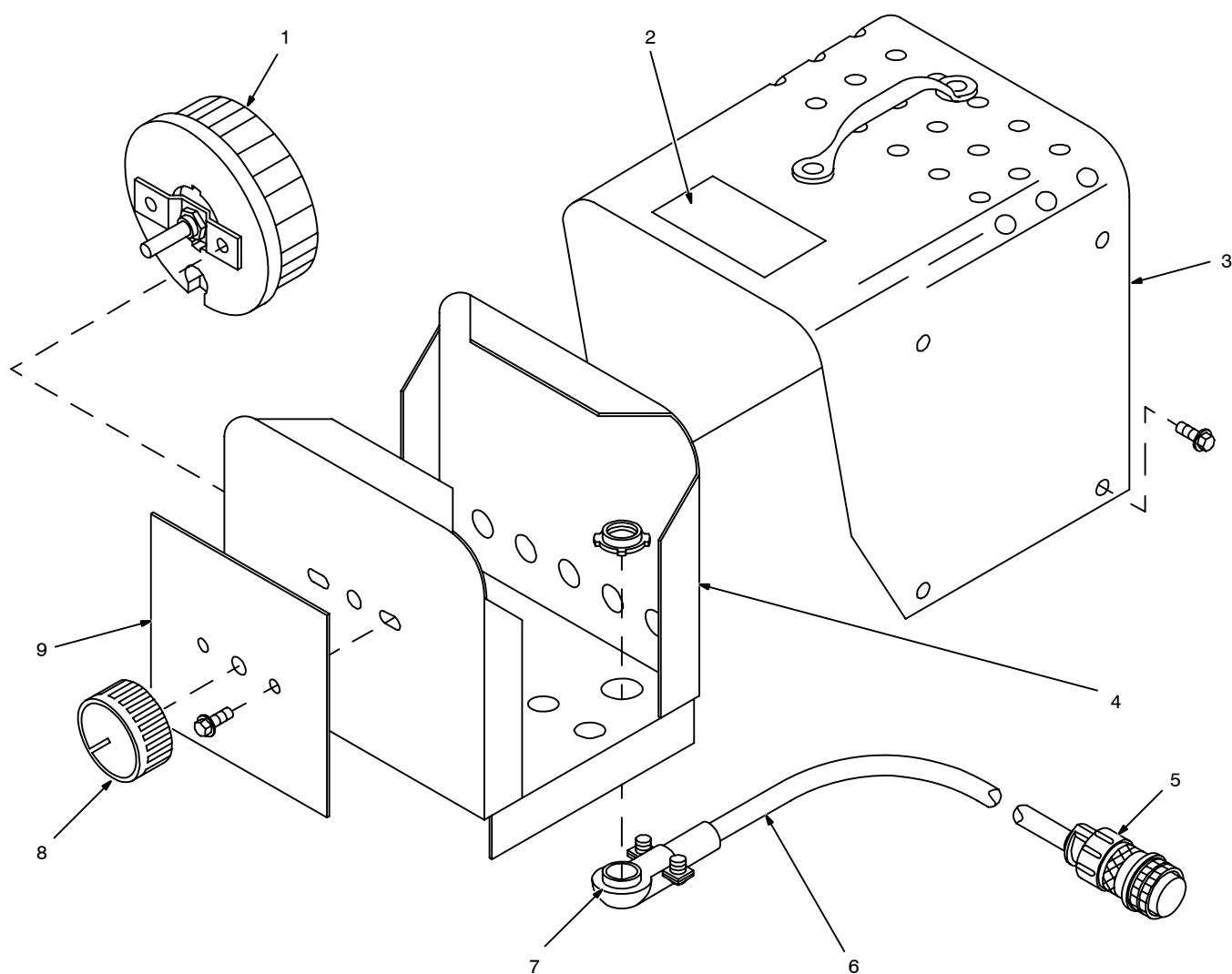


Figure 6-5. Circuit Diagram For RHC-14 And RHC-23

SA-053 656-A

SECTION 7 – PARTS LIST



ST-141 128

Figure 7-1. Complete Assembly (RHC-3 Illustrated)

Item No.	Dia. Mkgs.	Part No.	Description	Quantity				
				Model				
				RHC-3	RHC-3-2	RHC-14	RHC-23	RHCS-3
Figure 7-1. Complete Assembly								
... 1	R1	030 653	RHEOSTAT, WW 150W 15 ohm	1				
... 1	R1	107 363	RHEOSTAT, WW 150W 15 ohm		1			
... 1	R1	035 897	POTENTIOMETER, C sltd sft 1/T 2W					
			1000 ohm	1	1			
... 1	R1	039 272	RHEOSTAT, WW 150W 1250 ohm					1
... 2		085 220	LABEL, caution electric circuit	1	1	1	1	1
... 3		+021 475	WRAPPER	1	1			1
... 3		+014 417	WRAPPER			1	1	
... 4		021 474	CASE SECTION, base/front/rear	1				1
... 4		106 952	CASE SECTION, base/front/rear	1				
... 4		109 974	CASE SECTION, base/front/rear			1	1	
... 5	PLG1	605 797	PLUG, twlk 3P3W 20A 125V	1	2			
... 5	PLG1	144 310	HOUSING PLUG & PINS, (consisting of)					1
		134 732	TERMINAL, male 1 pin 24-20 wire				14	
		143 922	CLAMP, cable strain relief sz 17 & 20				1	
... 5	PLG1	039 273	PLUG, 5 pin MS-3106A-16S-8P				1	1
		039 685	CLAMP, cable AN-3057-8				1	1
... 6		600 733	CORD SET, pwr 115V 16ga 3/c 20ft	1	2			1
... 6		052 246	CABLE, pwr 20ga 5/c (order by ft)				20ft	20ft
... 7		010 659	CONNECTOR, clamp cable .375 90deg	1	2			1
... 7		070 654	BUSHING, strain relief					
			.300 ID x .550mtg hole			1	1	
... 8		097 926	KNOB, pointer	1	1			1
... 8		097 922	KNOB, pointer			1	1	
... 9		039 411	NAMEPLATE	1				
... 9		148 720	NAMEPLATE	1				
... 9		130 214	NAMEPLATE			1		
... 9		053 574	PLATE, ind current				1	
... 9		148 716	NAMEPLATE					1
... S1		011 609	SWITCH, tgl SPDT 15A 125VAC			1	1	
		604 311	GROMMET, rbr .250 ID x .375mtg hole				1	

+When ordering a component originally displaying a precautionary label, the label should also be ordered.
BE SURE TO PROVIDE MODEL AND SERIAL NUMBER WHEN ORDERING REPLACEMENT PARTS.

Item No.	Dia. Mkgs.	Part No.	Description	Quantity	
				Model	
				RHC-3-GD	
				25B	34A
605 960 Complete Assembly (Use Fig 7-1 View)					
.. 1	R1	605 960	RHEOSTAT, WW 300W 34 ohm		1
.. 1	R1	605 049	RHEOSTAT, WW 300W 25 ohm	1	
.. 2		085 220	LABEL, caution electrical circuit	1	1
.. 3	R1	+021 475	WRAPPER	1	1
.. 4		021 474	CASE SECTION, base/front/rear	1	1
.. 5	PLG1	032 898	PLUG, twlk grd 2P3W 15A 125V		1
.. 5	PLG1	039 621	PLUG, twlk armd 4P4W 20A 250V	1	
.. 6		600 349	CABLE, port No.14 3/c (order by ft)		20ft
.. 6		604 834	CABLE, port No.14 4/c (order by ft)		20ft
.. 7		010 659	CONNECTOR, clamp .375 90deg	1	1
.. 8		148 723	KNOB, pointer	1	1
.. 9		148 717	NAMEPLATE, RHC-3GD 34A		1
.. 9		013 615	PLATE, ind amperage	1	

+When ordering a component originally displaying a precautionary label, the label should also be ordered.
BE SURE TO PROVIDE MODEL AND SERIAL NUMBER WHEN ORDERING REPLACEMENT PARTS.